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EXAMINER WOZNIAK, JAMES S				
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary**Application No.**

09/738,291

Applicant(s)

HECHT ET AL.

Examiner

JAMES S. WOZNIAK

Art Unit

2626

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 February 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-18 and 21 is/are rejected.
- 7) ☒ Claim(s) 19 and 20 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 May 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/C)
- 4) ☐ Interview Summary (PTO-413)
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____
- Paper No(s)/Mail Date _____

DETAILED ACTION

Response to Amendment

1. In response to the office action from 9/28/2007, the applicant has submitted an amendment, filed 2/28/2008, amending claims 2-3, 5, 7, 8, 14, while adding new claims 18-21 and arguing to traverse the art rejection based on the limitation regarding the encoding of translation data in a document in machine-readable code (*Amendment, Pages 11-12*).
2. In response to the amended claims, the examiner has withdrawn the previous objections directed towards minor informalities.

Response to Arguments

3. Applicant's arguments have been fully considered but they are not persuasive for the following reasons:

With respect to **Claim 1**, the applicant argues that the prior art combination of Ito (*U.S. Patent: 6,330,529*) and Lamoure (*U.S. Patent: 5,416,312*) fails to teach the encoding of translation data in a document in machine-readable code because Ito only embeds translation data that is still human-readable and Lamoure's translation data is indexed and recorded elsewhere (*Amendment, Pages 13-14*). These arguments have been fully considered, but are not convincing for at least two reasons.

First, the examiner notes that the aforementioned claim limitation is taught by the combination of Ito and Lamoure. Ito teaches the concept of coding (*i.e., encoding- because the translation is indicated in a computer code*) an original text and a translation of that text into a document (*Col. 5, Lines 1-50; and Col. 6, Lines 40-58*). Ito does not teach a machine-readable code, however, this limitation is taught by Lamoure. Lamoure is relied upon to provide the concept of encoding translation data into a document as machine readable code (*Col. 2, Lines 15-40; Col. 8, Lines 16-22; and Figs. 4-5*). Thus, one of ordinary skill in the art, recognizing the concept of encoding translation information as image code and the benefit that it provides (*visually including translation data without degrading text data, Col. 2, Lines 15-40*), would be motivated to encode the translation information (*i.e., the translation of the original document*) of Ito in such a fashion. Therefore, it is the combination of the prior art of record that provides the aforementioned claim limitation. Also, in response to these arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). Lamoure also does not teach away from Ito because Lamoure only states that an external database *can* be used (*Col. 2, Lines 29-40*). Lamoure makes no mention that an entire translation cannot be included in the code (*i.e., "teaching away"*) and teaches the concept of including further functional data into a document. Ito also teaches the same concept of incorporating further functional data into a document in the form of a translation (*see above*). Lamoure provides the benefit of a visual means for incorporating Ito's translation into a physical document

without degrading text. Thus, Lamoure does not teach away from Ito, but actually provides a noted benefit over the teachings of this primary reference.

Second, the examiner points out that the claim requires performs a translation to generate translation data, which is taught by Ito (*Col. 4, Lines 58-65*). The claim does not then state that a direct translation of an original document is encoded into a document, it indicates only that "translation data" pertaining to that translation processes is encoded. So even indexed data, which would call up the appropriate translation dictionary to produce the required translation would read on this limitation because it represents translation "data". In this case also, the applicants arguments are not convincing.

The applicant's arguments with respect to claim 5 are similar to those presented with respect to claim 1 (*Amendment, Pages 14-15*). In regards to these arguments, see the response directed towards claim 1. Furthermore, Lamoure does teach that translation "data" (*see above*) is encoded as machine-readable binary image code (*Col. 4, Lines 41-46*), which in the case of Ito is a direct translation of an original document. Thus, these arguments have been fully considered, but are not convincing.

Some of the applicant's arguments with respect to claim 14 are similar to those presented with respect to claim 1 (*Amendment, Pages 16-17*). In regards to these arguments, see the response directed towards claim 1. Furthermore, these arguments are moot with respect to the below grounds of rejection in further view of Zdybel et al (*U.S. Patent: 5,486,686*). The applicant argues that Zdybel does not teach the glyph marks as claimed, however, the examiner notes that Zdybel notes that self-clocking glyph codes are used as are found in Bloomberg (*U.S.*

Patent: 5,168,147), which inherently do meet the added claim limitation. Thus, these arguments have been fully considered, but are not convincing.

The remaining dependent claims are traversed for reasons similar to the independent claims (*Amendment, Pages 14-15 and 17*). In regards to these arguments, see the corresponding above response.

Claim Rejections - 35 USC § 112

4. **Claim 2** is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 2, as amended, recites that machine-readable code is displayed on the document in a “fixed constant displayed manner”. It is unclear what is specifically meant by this term, which is not defined in the specification, nor easily connected to any of the existing terminologies of the disclosure. It appears that this limitation is referring to a hardcopy generated by a printer which would be a fixed image. The claim will be considered accordingly for the application of the prior art of record.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. **Claims 1-2, 4-5, 7, 9-13, and 18** are rejected under 35 U.S.C. 103(a) as being unpatentable over Ito (*U.S. Patent: 6,330,529*) in view of Lamoure (*U.S. Patent: 5,416,312*).

With respect to **Claim 1**, Ito discloses:

Receiving input text data indicating text of a document in a first human-readable language (*input unit for acquiring an original document, Col. 4, Lines 26-29*);

Performing a translation operation using the input text data to produce translation data indicating a second human-readable language translation of the first human-readable language (*translating the original document into a second language, Col. 4, Lines 58-65*);

Encoding the translation data in a machine-readable code (*encoding translation data in computer code, Col. 5, Lines 1-50; and Col. 6, Lines 40-58*); and

Merging the input text data with the machine-readable code to produce merged image data (*embedding the original text and computer code into a document, Col. 5, Lines 1-50; and Col. 6, Lines 40-58*).

Although Ito discloses inserting translation data into a document as a computer-readable or machine-readable code, certain humans could still read this code because it is letter-based. Lamoure, however, recites the ability to overlay image data on top of document text that indicates translation data (*Col. 2, Lines 15-40; Col. 2, Lines 14-40; and Col. 8, Lines 16-22*). This code-indicative image scheme cannot be read by a human and shows up as grayscale in a document (*see Figs. 4 and 5*).

Ito and Lamoure are analogous art because they are from a similar field of endeavor in embedding translation data in a document. Thus, it would have been obvious to a person of

ordinary skill in the art, at the time of invention, to modify the teachings of Ito with the image coding scheme taught by Lamoure in order to provide translation information not present on an original document without degrading the text data (*Lamoure, Col. 2, Lines 15-40*).

With respect to **Claim 2**, Lamoure further discloses:

Rendering via an electronic image generating device the merged image data on a hardcopy document, wherein the machine-readable code is on the document in a fixed constant displayed manner (*document text overlaid with coded image data that is readable by using an optical wand, Col. 2, Lines 29-40, Col. 5, Lines 38-59; Col. 8, Lines 16-22; and fixed constantly displayed pattern on a document, Figs. 3-5; and rendering on a printer, Col. 3, Lines 55-68*).

With respect to **Claim 4**, Lamoure discloses overlaying code-indicative image data on top of document text as applied to claim 1.

With respect to **Claim 5**, Ito discloses:

Receiving image data indicating a document, wherein said document, when rendered, comprises human-readable text written in a first language, said image data including language translation data encoded in machine-readable code embedded in said image data (*retrieved document comprising original language text and translation data in computer code, Col. 5, Lines 1-50; and Col. 6, Lines 40-58*);

Receiving selection data indicating a selected foreign language for translation of said human-readable text written in the first language (*selecting a second language, Col. 3, Lines 57-67*); and

Producing a human-readable translation of said document in said selected foreign language using the language translation data encoded in said machine-readable code (*outputting*

a document translation to a user based on the software code embedded in the document, Col. 4, Lines 26-44; and Col. 5, Lines 1-50; and Col. 6, Lines 40-58).

Although Ito discloses inserting translation data into a document as a computer-readable or machine-readable code, certain humans could still read this code because it is letter-based. Lamoure, however, recites the ability to overlay binary code image data on top of document text that indicates translation data (*Col. 2, Lines 15-40; Col. 2, Lines 14-40; Col. 4, Lines 41-46; and Col. 8, Lines 16-22*). This code-indicative image scheme is shown on a document, cannot be read by a human, and shows up as grayscale in a document (*see Figs. 4 and 5*). This binary code is decodable by electronic scanning technology (*Col. 5, Lines 38-59*). This encoded image data is further capable of generating an automatic translation of a document (*Col.8, Lines 16-22*).

Ito and Lamoure are analogous art because they are from a similar field of endeavor in embedding translation data in a document. Thus, it would have been obvious to a person of ordinary skill in the art, at the time of invention, to modify the teachings of Ito with the image coding scheme taught by Lamoure in order to provide translation information not present on an original document without degrading the text data (*Lamoure, Col. 2, Lines 15-40*).

With respect to **Claim 7**, Ito further discloses:

The step of receiving image data further comprises the step of performing OCR of the human-readable text (*original language text acquisition using a scanner, Col. 4, Lines 26-44*).

With respect to **Claim 9**, Ito discloses translating a document into second languages as applied to Claim 5, while Lamoure discloses the ability to index a word to multiple translation instances and further recites:

Identifying a portion of the machine-readable code in the image data representing the document that corresponds to the selected foreign language (*identifying encoded image data for one of a plurality of word indices, Col. 8, Lines 16-23*); and

Decoding the identified portion of the machine-readable code (*decoding the encoded image data to perform a translation using an optical wand reader, Col. 5, Lines 38-59; and Col. 8, Lines 16-23*).

With respect to **Claim 10**, Ito further discloses:

Translating the human-readable text into the human-readable translation of said selected foreign language (*outputting a translation to a user, Col. 4, Lines 26-44*); and

Improving the human-readable translation of said selected foreign language using the identified portion of the machine-readable code (*improving a translation by selecting the most proper words, which are identified by computer codes, Col. 6, Lines 51-67*).

With respect to **Claim 11**, Ito discloses performing a complete translation of an input document (*complete document translation, Col. 4, Lines 58-65*), while Lamoure discloses that each word in an original text is indexed to translation data using a compressed image-based coding format (*Col. 8, Lines 16-22 and Fig. 4*), which can be decoded via an optical wand reader (*Col. 8, Lines 16-22; and 5, Lines 38-59*).

With respect to **Claim 12**, Ito discloses the translation improvement codes, as applied to claim 10, which are used to edit a default (*first*) translation.

With respect to **Claim 13**, Ito discloses part of speech and improvement language term codes that can be utilized to correct default translations that are inaccurate (*Col. 6, Lines 40-67*),

while Lamoure recites performing a word-for-word translation using an automatic translation dictionary index look-up based on an image-based encoding scheme (*Col. 8, Lines 16-22*).

With respect to **Claim 18**, Ito discloses producing a translation of original document pages (*which would inherently have varying degrees of accuracy because of the need for improving the translation, Col. 6, Lines 51-67*) and coding the original document and the translation into a single document, as applied to claims 1 and 5. Lamoure discloses that a translation can be stored as a coded sequence or set of binary glyph codes (*See Figs. 3-5 and Col. 8, Lines 16-22*) and the general concept of encoding document editing data in such a machine code. Lamoure further notes that the decoding process is performed using OCR (*Col. 5, Lines 38-59*). Finally, Ito teaches performing a degree of required correction (*i.e., accuracy improvement*) to a completed translation based on correction information (*Col. 6, Lines 51-67*) (*which can be included via Lamoure's code, which in this case would be a correction glyph code*).

7. **Claims 3, 6, and 14-17** are rejected under 35 U.S.C. 103(a) as being unpatentable over Ito in view of Lamoure and further in view of Zdybel et al (*U.S. Patent: 5,486,686*).

With respect to **Claim 3**, Ito in view of Lamoure discloses the method for encoding translation data in a document in a machine-readable image format, as applied to Claim 1. Ito in view of Lamoure does not recite that the machine-readable image format is a self-clocking glyph shape code, however, Zdybel recites the use of a self-clocking glyph shape code for embedding various editing functions in a document, which satisfies the descriptions of the present claim (*Col. 8, Line 51- Col. 9, Line 12; and Col. 9, Lines 38-67*).

Ito, Lamoure, and Zdybel are analogous art because they are from a similar field of endeavor in embedding function data in a document. Thus, it would have been obvious to a person of ordinary skill in the art, at the time of invention, to modify the teachings of Ito in view of Lamoure with the self-clocking glyph shape code taught by Zdybel in order to encode document information in a well-known format that can be implemented using common printing devices (*Zdybel, Col. 9, Lines 1-12*).

Claim 6 contains subject matter similar to Claim 3, and thus, is rejected for the same reasons.

With respect to **Claim 14**, Ito discloses:

Receiving input text data indicating text of a document in a first human-readable language (*input unit for acquiring an original document, Col. 4, Lines 26-29*);

For each one of a plurality of output foreign languages, performing a language translation operation using the input text data to produce a set of language translation data (*translating the original document into different second languages and storing translations, Col. 4, Lines 58-65; Col. 5, Lines 17-35*);

Encoding each set of the language translation data in a machine-readable code segment (*encoding translation data in computer code, Col. 5, Lines 1-50; and Col. 6, Lines 40-58*);

Producing primary channel image data representing the input text data in the first human-readable language, the primary channel image data presenting the input text data as human-readable text when rendered as image data in the output document (*original language text included in a translation document, Col. 5, Lines 1-50*); and

Merging the primary channel image data with the plurality of machine- readable code segments to produce merged document image data (*embedding the original text and computer code into a document, Col. 5, Lines 1-50; and Col. 6, Lines 40-58*).

Although Ito discloses inserting translation data into a document as a computer-readable or machine-readable code, certain humans could still read this code because it is letter-based. Lamoure, however, recites the ability to overlay image data on top of document text that indicates translation data (*Col. 2, Lines 15-40; Col. 2, Lines 14-40; and Col. 8, Lines 16-22*). This code-indicative image scheme cannot be read by a human and shows up as grayscale in a document (*see Figs. 4 and 5*). This encoded image data is further capable of generating an automatic translation of a document when scanned by an optical wand (*Col. 5, Lines 38-59; and words assigned to a plurality of translation data instances, Col.8, Lines 16-22*).

Ito and Lamoure are analogous art because they are from a similar field of endeavor in embedding translation data in a document. Thus, it would have been obvious to a person of ordinary skill in the art, at the time of invention, to modify the teachings of Ito with the image coding scheme taught by Lamoure in order to provide translation information not present on an original document without degrading the text data (*Lamoure, Col. 2, Lines 15-40*).

Ito in view of Lamoure does not recite that the machine-readable image format is a self-clocking glyph shape code, however, Zdybel recites the use of a self-clocking glyph shape code for embedding various editing functions in a document, which satisfies the descriptions of the present claim (*Col. 8, Line 51- Col. 9, Line 12; and Col. 9, Lines 38-67*).

Ito, Lamoure, and Zdybel are analogous art because they are from a similar field of endeavor in embedding function data in a document. Thus, it would have been obvious to a

person of ordinary skill in the art, at the time of invention, to modify the teachings of Ito in view of Lamoure with the self-clocking glyph shape code taught by Zdybel in order to encode document information in a well-known format that can be implemented using common printing devices (*Zdybel, Col. 9, Lines 1-12*).

With respect to **Claim 15**, Ito discloses performing a complete translation of an input document (*complete document translation, Col. 4, Lines 58-65*), while Lamoure discloses that each word in an original text is indexed to translation data using a compressed image-based coding format (*Col. 8, Lines 16-22 and Fig. 4*).

With respect to **Claim 16**, Ito discloses the translation improvement codes as applied to claim 10, while Lamoure recites decoding encoded image data to perform translation as applied to claim 14.

With respect to **Claim 17**, Ito discloses improvement language term codes that can be utilized to correct default translations that are inaccurate (*Col. 6, Lines 51-67*), while Lamoure recites decoding encoded image data to perform a word-for-word translation as applied to claim 14.

8. **Claim 8** is rejected under 35 U.S.C. 103(a) as being unpatentable over Ito in view of Lamoure and further in view of Kuo ("*Assist Channel Coding for Improving Optical Character Recognition*," 2000).

With respect to **Claim 8**, Ito in view of Lamoure discloses the method for encoding translation data in a document in a machine-readable image format, as applied to Claim 7. Ito in view of Lamoure does not recite that the machine-readable image format includes an assist

channel including information that assists in the identification of OCR failures (*Chapter 1, Sections 1-1.2*).

Ito, Lamoure, and Kuo are analogous art because they are from a similar field of endeavor in embedding function data in a document. Thus, it would have been obvious to a person of ordinary skill in the art, at the time of invention, to modify the teachings of Ito in view of Lamoure with the assist channel taught by Kuo in order to help ensure an accurate reconstruction of a document from its physical version (*Kuo, Chapter 1, Section 1.1*).

9. **Claim 21** is rejected under 35 U.S.C. 103(a) as being unpatentable over Ito in view of Lamoure in view of Zdybel et al and further in view of Hecht (*U.S. Patent: 5,825,933*).

With respect to Claim 21, Ito in view of Lamoure and further in view of Zdybel recites the use of a self-clocking glyph shape code for embedding various translation functions in a document, as applied to Claim 14. Ito, Lamoure, and Zdybel do not teach a glyph-containing document having the dimensions recited in claim 21, however, Hecht teaches such dimensions (*Col. 3, Line 51- Col. 4, Line 15*).

Ito, Lamoure, Zdybel, and Hecht are analogous art because they are from a similar field of endeavor in embedding function data in a document. Thus, it would have been obvious to a person of ordinary skill in the art, at the time of invention, to modify the teachings of Ito in view of Lamoure and further in view of Zdybel with the glyph structure taught by Hecht in order to provide a translation code with an unobtrusive visual appearance (*Hecht, Col. 1, Lines 28-29*).

Allowable Subject Matter

10. **Claims 19-20** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

11. The following is a statement of reasons for the indication of allowable subject matter:

With respect to **Claim 19**, the prior art of record fails to explicitly teach or fairly suggest, either individually or in combination, a method for producing a translation from a document featuring human-readable text in a first language and machine-readable self-clocking glyph codes as set forth in claims 5 and 18 in combination with a translation editing/correction code as part of the self-clocking glyph codes that perform disambiguation by first framing a series of questions to a person fluent with the first language, using by the translation software answers to the questions to make choices of word sense and sentence patterns in the second language, and then recording the answers in the code so the fluent person's knowledge is later available for guidance when a translation is undertaken. Although Ito (U.S. Patent: 6,330,529) discloses including correction code in a document for translation (Col. 6, Lines 51-67), Ito fails to explicitly teach that the correction code is derived from the disambiguation process recited in claim 19.

Claim 20 further limits a claim containing allowable subject matter, and thus, also contains allowable subject matter by virtue of its dependency.

Conclusion

12. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: See PTO-892.

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to James S. Wozniak whose telephone number is (571) 272-7632. The examiner can normally be reached on M-Th, 7:30-5:00, F, 7:30-4, Off Alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Edouard can be reached at (571) 272-7603. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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